

Appendix D

NON-TECHNICAL ABSTRACT:

Autologous bone marrow transplantation is a technique which makes safe the very high doses of chemotherapy and radiation which are required to eradicate some populations of leukemia cells. The marrow is removed and stored from the hip bone of the patient at the time of remission induced by conventional dose chemotherapy, and re-infused into the patient after intensive therapy in order to restore marrow function. It is impossible to determine if relapse arises from residual leukemia cells infused with the autologous marrow or if residual leukemia cells present in systemic circulation after intensive therapy contribute to the relapse. A molecule called a "marking vector" can be used to resolve this question. A portion of the bone marrow and peripheral blood cells stored from patients will be incubated with the marking vector. This vector will introduce a new genetic marker into these leukemia cells. If the leukemia cells appearing at relapse contain the marker, then the relapse arose from cells infused with the autologous transplantation. If this is the case, more thorough procedures must be undertaken to cleanse the marrow of leukemia cells. If no markers appear at the time of relapse in the leukemia cells, then the relapse arose from the systemic circulation. In this case, the therapy used to eradicate leukemia from the circulation before transplant must be intensified. In this study, a marking molecule, called LNL6, will be used to tag the leukemic blast cells of each patient infused to regenerate marrow function after intensive therapy. The results of this study will be used to improve the therapy given to patients. It is not designed to benefit the patients themselves.